

Case study



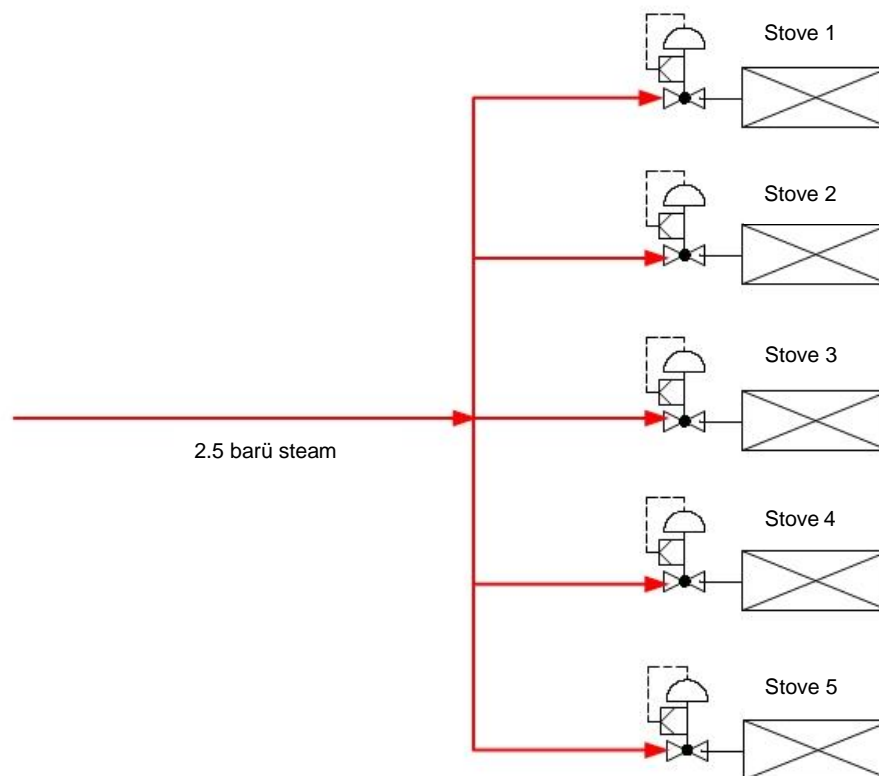
BAELZ PRODUCT: Steam jet pump with pneumatic drive, baelz 590 DN 125, PN 16
INDUSTRY: Paper industry
COMPANY: Sappi Fine Papers
COUNTRY: Austria

sappi

INITIAL SITUATION

Sappi Fine Paper produces high-quality, multi-coated paper at the Gratkorn location near Graz. For one of the first steps in the production of the paper, wood chips are processed in several parallel-operated stoves. Steam with a certain pressure is required in order for the wood chips to be transported into the chambers and heated there. The steam only serves to give the wood chips an impulse. In the stove itself, the steam is immediately sucked up again, i.e. the wood chips only come into contact with the steam briefly.

Prior to the installation of a controlled steam jet pump, the stoves were charged with approximately 2.5 bar steam pressure.



Plant layout before renovation

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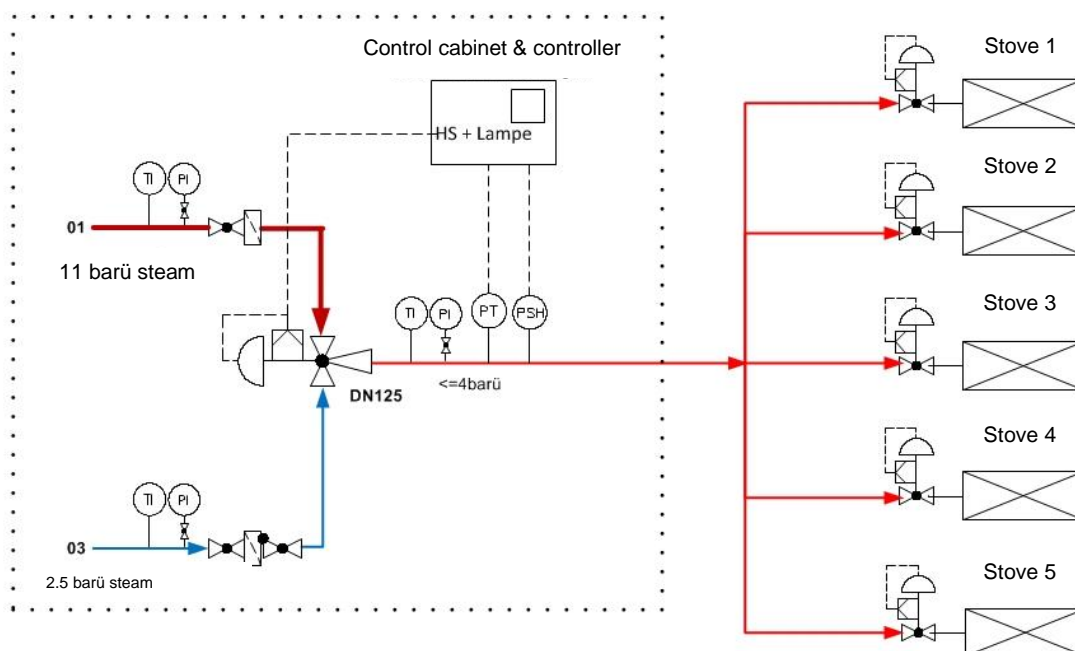
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TECHNICAL MODIFICATIONS

If higher steam pressure is achieved, the degree of filling of the individual stoves and thus the process efficiency increases. The aim was to increase the steam pressure before the stove up to max. 5 bar. This was the task when Baelz was approached.

With the controlled steam jet pump baelz 590, it is now possible to combine a low steam pressure (2.5 bar) with the motive steam rail of 11 bar and thus to move to a higher pressure of approx. 4bar. If needed, the pressure can be further increased or regulated by means of the stroke on the controlled steam jet pump baelz 590.

In the project, the quantities continue to be controlled by means of the control valves per stove and, in addition, the pressure can be varied infinitely. Only one stove is filled at a time.



Plant layout after the renovation by means of a controlled steam jet pump baelz 590

SAVINGS/ECONOMIC EFFICIENCY

Through the renovation of the plant, Sappi was able to increase the output of each filling process by approx. 3-5%, which means considerable savings. Thanks to these savings, the project has paid for itself within a few months.

General overview of the technology

Steam jet pump baelz590 as a steam compressor - to recover exhaust steam

The potential energy (propellant pressure P01) is converted into kinetic energy (velocity) in the propellant nozzle (1). This results in a pressure reduction and thus a suction effect.

Due to the pressure (P03), the propellant quantity (M01) mixes with the suction quantity (M03) in the mixing tube (2) and relaxes from the mixing pressure (P04) in the diffuser (3). The quantity generated (M04) is the sum of the propellant (M01) and suction quantity (M03).

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